

CLAIMS

1. A method of adjusting a room air in a first room wherein the room air is supplemented continuously or at recurring intervals of time by nitrogen or a nitrogen-bearing, carbon dioxide-poor gas mixture in such a way that the proportion of oxygen in the room air is less than 20.9% by volume and the proportion of carbon dioxide of the room air is less than 1% by volume or preferably 0.65% by volume, wherein at the same time at least a slight overpressure in relation to an outside atmosphere surrounding the room is set in the room.
2. A method as set forth in claim 1 characterised in that the room air is passed in a circulatory air mode.
3. A method as set forth in claim 2 characterised in that a room air exchange caused by the circulatory air mode in the recreation room is so adjusted that a homogeneous atmosphere prevails in the recreation room.
4. A method as set forth in claim 2 characterised in that a proportion of carbon dioxide of the room air is replaced in the circulatory air mode by replacement of a proportion of the room air by carbon dioxide-poor air of the outside atmosphere with a normal proportion of oxygen, wherein the proportion of the room air exchanged in the circulatory air mode is so adjusted that the room air maintains a concentration of carbon dioxide below fixed limit values of up to 0.65% by volume.
5. A method as set forth in claim 2 characterised in that the proportion of carbon dioxide in the circulatory air is additionally reduced chemically, for example by means of lime.
6. A method as set forth in claim 2 characterised in that the room air which is passed in the circulatory air mode is treated as required by regulated ionisation in such a way that the room air with a low carbon

dioxide content and a reduced proportion of oxygen in relation to the outside atmosphere maintains over a plurality of circulatory air cycles an air quality which does not differ substantially from the quality of the outside atmosphere.

7. A method as set forth in claim 1 characterised in that the room air is supplemented by mixing the room air with the gas mixture at an overpressure or a reduced pressure.

8. A method as set forth in claim 7 characterised in that the operation of mixing the gas mixture is performed in a mixing chamber to which the components of the gas mixture to be mixed are fed at an increased pressure or a reduced pressure in dependence on the desired gas mixture of the mixing chamber.

9. A method as set forth in claim 7 characterised in that the gas mixture is mixed from air of the outside atmosphere and nitrogen.

10. A method as set forth in claim 2 characterised in that at least one of the properties of the circulatory air such as air humidity, air temperature or the like is measured and adjusted in a regulated fashion.

11. A method as set forth in one of claims 1 to 7 characterised in that the oxygen-bearing gas mixture is produced by air separation by means of a separation installation to which the room air is added in a circulatory air mode, and wherein additionally mixed with the circulatory air is ambient air or nitrogen or a nitrogen-bearing gas mixture in an amount which corresponds to an equivalent of the discharge air with increased oxygen content, which is produced in the air separation procedure.

12. A method as set forth in claim 1 characterised in that the nitrogen-bearing gas mixture is produced by air separation from ambient air.

13. A method as set forth in claim 12 characterised in that an oxygen-enriched gas mixture which is produced in the air separation operation, with a proportion of oxygen of more than 21% by volume, is added to a second room so that the room air in the second room has an oxygen content which is increased in relation to the ambient air.

14. A method as set forth in claim 13 characterised in that the room air with the increased oxygen content in the second room is treated as set forth in one of claims 1 to 10.

15. A recreation room for human beings or animals, in particular a sport training room, which is filled with room air and which is adapted to hold at least a slight overpressure in relation to an outside atmosphere surrounding the recreation room, at least for a short period of time, wherein the recreation room is communicated by way of an air inlet opening and an air outlet opening to a room air installation which is adapted to adjust the room air in the recreation room so that its oxygen partial pressure is lower than the oxygen partial pressure of the outside atmosphere.

16. A recreation room for human beings or animals, in particular a sport training room, which is filled with room air and which is adapted to hold at least a slight overpressure in relation to an outside atmosphere surrounding the recreation room, at least for a short period of time, wherein the recreation room is communicated by way of an air inlet opening and an air outlet opening to a room air installation which is adapted to adjust the room air in the recreation room so that its oxygen partial pressure is greater than the oxygen partial pressure of the outside atmosphere.

17. An arrangement comprising at least one respective recreation room as set forth in claim 15 and claim 16 which are connected to a

common room air installation by which the respective room air for each of the recreation rooms is to be treated separately in the circulatory air mode as set forth in claims 1 to 14, wherein the room air installation includes an air separation unit for separating ambient air into a first gas mixture with a proportion of oxygen which is reduced in relation to the ambient air and a second gas mixture with a proportion of oxygen which is increased in relation to the ambient air and the room air installation is adapted in such a way that as required the first gas mixture is to be mixed with the room air, guided in a circulatory air mode of operation, of the recreation room as set forth in claim 15, and as required the second gas mixture is to be added to the room air, guided in the separate circulatory air mode of operation, of the recreation room as set forth in claim 16.

18. A room air installation for a recreation room as set forth in claim 1 comprising a circulatory air passage and a pump or blower for moving circulatory air in the circulatory air passage characterised by a mixing chamber connected in the circulatory air passage and having an air inlet and an air outlet for the circulatory air and an inlet for ambient air from the outside atmosphere and a nitrogen inlet for the feed of nitrogen into the mixing chamber.